



LK8224-LAS

0046824

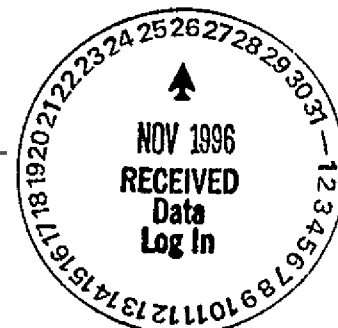
## *Lockheed Analytical Services*

Ms. Joan Kessner  
Bechtel Hanford, Inc.  
3350 George Washington Way  
MISN B1-35  
Richland, WA 99352

### ANALYTICAL DATA REPORT

FOR

NITRATE, TOTAL URANIUM BY KPA,  
STRONTIUM-90, TECHNETIUM-99, AND TRITIUM



LOG-IN NUMBER:	<u>L8224</u>
QUOTATION NUMBER:	<u>Q400000-B</u>
SAF NUMBER:	<u>B97-023</u>
DOCUMENT FILE NUMBER:	<u>1029596</u>
BHI DOCUMENT FILE NO.:	<u>412</u>
SDG NUMBER:	<u>LK8224</u>

000001

Lockheed Environmental Systems & Technologies Co.  
Lockheed Analytical Services  
975 Kelly Johnson Drive Las Vegas, Nevada 89119-3705  
Telephone 702-361-0220 800-582-7605 Facsimile 702-361-8146

**LOCKHEED MARTIN**

November 25, 1996

Ms. Joan Kessner  
Bechtel Hanford, Inc.  
3350 George Washington Way  
MISN B1-35  
Richland, WA 99352

RE: Log-in No.: L8224  
Quotation No.: Q400000-B  
SAF No.: B97-023  
Document File No.: 1029596  
BHI Document File No.: 412  
SDG No.: LK8224



The attached data report contains the analytical results of samples that were submitted to Lockheed Analytical Services on October 29, 1996. The temperature of the cooler upon receipt was 2°C. Sample containers received agree with the chain-of-custody documentation. All sample containers were received intact. All samples were not received in time to meet the analytical holding time requirements.

The case narratives included in the following attachments provide a detailed description of all events that occurred during sample preparation, analysis, and data review specific to the samples and analytical methods requested.

A list of data qualifiers, chain-of-custody forms, sample receiving checklist, and log-in report are also enclosed representing the samples received within this group.

If you have any questions concerning the analysis or the data please call Mary Wolf at (702) 361-3955, extension 311. If you are unable to contact the client services representative, please call Mary B. Ford, client services manager, at extension 326.

"I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."

Sincerely,

*Mary K. Wolf*  
Mary K. Wolf  
Client Services Representative

cc: Client Services  
Document Control

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**CASE NARRATIVE  
INORGANIC NON METALS ANALYSES**

The routine calibration and quality control analyses performed for this batch include as applicable: initial and continuing calibration verification, initial and continuing calibration blanks, method blank(s), laboratory control sample(s), matrix spike (predigestion) sample(s), duplicate sample(s).

**Preparation and Analysis Requirements**

- One water sample was received for LK8224 and analyzed in batch 1029 bh for selected analytes to be analyzed in client-specified order as requested on the chain of custody. Quality control analysis was performed on the following samples:

Client ID	LAL #		Method
BOJCS7	L8224-2	DUP, MS	300.0 Nitrate-Nitrogen

**Holding Time Requirements**

- The sample was received and analyzed outside of the method-specific holding time. The associated sample is flagged with an "H".

**Method Blanks**

- The concentration levels of all the requested analytes in the method blank were below the reporting detection limits.

**Internal Quality Control**

- All Internal Quality Control were within acceptance limits.

Kay McCann  
Prepared By

November 6, 1996  
Date

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**Lockheed Analytical Services**

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Document File No.: 1029596  
BHI Document File No.: 412  
SDG No.: LK8224  
Page: 3

## **CASE NARRATIVE INORGANIC TOTAL URANIUM ANALYSES**

The routine calibration and quality control analyses performed for this batch include as applicable: instrument calibration, initial and continuing calibration verification, quench monitoring standards, instrument background analysis, method blanks, yield tracer, laboratory control samples, matrix spike samples, and matrix spike duplicate samples.

### **Preparation and Analysis Requirements**

All samples were received on October 29, 1996. The samples were logged in as L8224 and were prepared and analyzed in batch 1029 bt.

### **Holding Time Requirements**

All holding time requirements were met.

### **Total Uranium**

The Total Uranium analysis was performed using LAL-91-SOP-0168. All samples were prepared in Workgroup U TOTAL KPA LAL-0168 43099 with a Method Blank (MBB1), Laboratory Control Sample (LCS1), Duplicate (DUP1) and Matrix Spike (MS1). No problems were encountered during preparation or analysis. All QC criteria were met and no reanalysis was performed.

Shellee McGrath  
Prepared By

November 20, 1996  
Date

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## **CASE NARRATIVE RADIOCHEMISTRY ANALYSES**

The routine calibration and quality control (QC) analyses performed for this batch include as applicable: instrument calibration, initial and continuing calibration verification, quench monitoring standards, instrument background analysis, method blanks, yield tracer, laboratory control samples, matrix spike samples, and duplicate samples.

NOTE: Chemical recoveries and minimum detectable activities (MDAs) can be found on the preparation sheets and calculation sheets on the attached raw data for each method.

### **Holding Time Requirements**

All holding time requirements were met.

### **Gas Proportional Counter**

#### *Analytical Method Strontium-90*

The strontium-90 analysis was performed using standard operating procedure (SOP), LAL-91-SOP-0065. The samples were analyzed in workgroups 43149 and 43582. The samples in workgroup 43149 were re-analyzed in workgroup 43582 due to out-of-criteria laboratory control sample (LCS) and matrix spike (MS) recoveries. No analyses from workgroup 43149 were reported. The instrument calibration verification met criteria. The method blank was within QC criteria. The LCS and MS recoveries were within QC criteria. The duplicate (DUP) recoveries were within QC criteria. No other re-analyses were performed.

### **Liquid Scintillation Counter**

#### *Analytical Method Technetium-99*

The technetium-99 analysis was performed using SOP, LAL-91-SOP-0169. The samples were analyzed in workgroup 43151. The instrument calibration verification met criteria. The method blank was within QC criteria. The LCS and MS recoveries were within QC criteria. The DUP recoveries were within QC criteria. The quench value was within curve limitations. No re-analyses were performed.

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**Lockheed Analytical Services**

Log-in No.: L8224  
Quotation No.: Q400000-B  
SAF No.: B97-023  
Document File No.: 1029596  
BHI Document File No.: 412  
SDG No.: LK8224  
Page: 5

**Analytical Method Tritium**

The tritium analysis was performed using SOP, LAL-91-SOP-0066. The samples were analyzed in workgroup 43158. The instrument calibration verification met criteria. The method blank was within QC criteria. The LCS and MS recoveries were within QC criteria. The DUP recoveries were within QC criteria. The quench value was within curve limitations. No re-analyses were performed.

Andrea Tippet  
Prepared By

November 24, 1996  
Date

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Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST										B97-023-50		Page 1 of 1			
Collector R. Fahlberg				Company Contact Jane Borghese				Telephone No. (509) 373-4790				Project Coordinator Koerner, CC				Data Turnaround 45 Days	
Project Designation Pre-Startup Sampling for 100-HR-3 Interim Action Monitoring				Sampling Location 100 H and 100 D				SAF No. B97-023									
Ice Chest No. 95009				Field Logbook No. EL 1289				Method of Shipment Federal Express									
Shipped To Lockheed				Offsite Property No. W97-0001-5				Bill of Lading/Air Bill No. Q771634433									
POSSIBLE SAMPLE HAZARDS/REMARKS				Preservation		None	None	Cool 4C	HNO3 to pH <2	HCl to pH <2	HNO3 to pH <2						
				Type of Container		P	G	P	P	P	P						
				No. of Container(s)		1	1	1	1	4	4						
Special Handling and/or Storage Maintain samples between 2 degrees C and 6 degrees C				Volume		20ml	500ml	500ml	500ml	1000ml	1000ml						
SAMPLE ANALYSIS				Activity Scan		Tritium - H3	IC Anions - 3000 (Nitrogen as Nitrate)	Total Uranium	Technetium-99	Strontium-89,90 - Total Sr							
Sample No.		Matrix *		Sample Date		Sample Time											
BOJCS7		Water		10-25-96		10-20		X	X	X	X	X	X				
CHAIN OF POSSESSION		Sign/Print Names				SPECIAL INSTRUCTIONS ** The ERC Contractor acknowledges the 48-hour holding time for nitrate is not likely achievable								Matrix *			
Relinquished By R. Fahlberg		Date/Time 10-25-96		Received By B. Whitten		Date/Time 10-25-96										S = Soil SE = Sediment SL = Solid SL = Sludge W = Water O = Oil A = Air DS = Drum Solids DL = Drum Liquids T = Tissue WI = Wipe L = Liquid V = Vegetation X = Other	
Relinquished By B. Whitten		Date/Time 10-28-96		Received By		Date/Time											
Relinquished By		Date/Time		Received By		Date/Time											
Relinquished By		Date/Time		Received By		Date/Time											
LABORATORY SECTION		Received By A. M. [Signature]		Title Sample Custodian		Date/Time 10-29-96		0900									
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time											

# LOCKHEED ANALYTICAL SERVICES

## Sample Results

Client Sample ID: B0JCS7	Date Collected: 25-OCT-96
Matrix: Water	Date Received: 29-OCT-96
Percent Solids: N/A	

Constituent	Units	Method	Result	Project Reporting Limit	Data Qualifier(s)	Date Analyzed	LAS Batch ID	LAS Sample ID
Nitrate-N	mg/L	300.0	3.4	0.020	H	31-OCT-96	42974	L8224-2

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# LOCKHEED ANALYTICAL SERVICES

## RADIOCHEMISTRY DATA REPORT

Account Name: Bechtel Hanford, Inc. \* Richland, WA

Project Name: BECHTEL-HANFORD

Project Desc: Bechtel Hanford Project

Client Sample ID: B0JCS7

Date Collected: 25-OCT-96

Matrix: Water

Login Number: L8224

Date Received: 29-OCT-96

Constituent	Method	Batch	Activity	Error	MDA	Qualifier	Units	Analyzed	Lab ID
Uranium	KPA	43099	5.62	0.30	0.69		ug/L	19-NOV-96	L8224-3

# LOCKHEED ANALYTICAL SERVICES

## RADIOCHEMISTRY DATA REPORT

Account Name: Bechtel Hanford, Inc. \* Richland, WA

Project Name: BECHTEL-HANFORD

Project Desc: Bechtel Hanford Project

Client Sample ID: B0JCS7

Date Collected: 25-OCT-96

Matrix: Water

Login Number: L8224

Data Received: 29-OCT-96

Constituent	Method	Batch	Activity	Error	MDA	Qualifier	Units	Analyzed	Lab ID
H-3	LAL-0066	43158	8620	720	210		pCi/L	07-NOV-96	L8224-4

# LOCKHEED ANALYTICAL SERVICES

## RADIOCHEMISTRY DATA REPORT

Account Name: Bechtel Hanford, Inc. \* Richland, WA  
Project Name: BECHTEL-HANFORD  
Project Desc: Bechtel Hanford Project

Client Sample ID: B0JCS7  
Date Collected: 25-OCT-96  
Matrix: Water

Login Number: L8224  
Date Received: 29-OCT-96

Constituent	Method	Batch	Activity	Error	MDA	Qualifier	Units	Analyzed	Lab ID
Tc-99	LAL-0169	43151	-1.1	3.9	7.1		pCi/L	19-NOV-96	L8224-5

# LOCKHEED ANALYTICAL SERVICES

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## RADIOCHEMISTRY DATA REPORT

Account Name: Bechtel Hanford, Inc. \* Richland, WA

Project Name: BECHTEL-HANFORD

Project Desc: Bechtel Hanford Project

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Client Sample ID: B0JCS7

Date Collected: 25-OCT-96

Matrix: Water

Login Number: L8224

Date Received: 29-OCT-96

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Constituent	Method	Batch	Activity	Error	MDA	Qualifier	Units	Analyzed	Lab ID
Sr-89,90	LAL-0065	43582	-0.13	0.29	0.53		pCi/L	19-NOV-96	L8224-9

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